

are highly in demand and have been used in a wide variety of industries which employ metal as a material. According to the Examiner, Weaver further discloses metal matrix composites for use by a wide variety of industries. The Examiner submits that Weaver's matrix is formed from a molten metal consisting of aluminum, magnesium, titanium, and mixtures thereof and particles of silicon boride consisting of silicon tetraboride, silicon hexaboride and mixtures thereof, the silicon boride being present in a range from about 0.1 to about 80 weight percent in the molten metal. The Examiner expressly acknowledges, however, that Weaver is not specific with respect to which particular industries use his metal matrix. The Examiner next alleges that Eiko et al. teach a desire to have a light weight metal alloy body for horseshoes. The Examiner alleges that Eiko et al. employ similar *alloys* as that of Weaver, however, the Examiner expressly acknowledges the failure of Eiko et al. to teach a metal matrix composite comprising silicon boride. Despite the acknowledged deficiencies of the references, the Examiner concludes that it would have been obvious for one of ordinary skill in the art to employ the metal matrix composite of Weaver in the making of horseshoes as allegedly taught by Eiko et al..

A determination of *prima facie* obviousness is proper only when the references suggest or motivate one of ordinary skill in the art to modify or combine the reference teachings with a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be apparent from the prior art, and not the applicant's disclosure. See In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP 2143.03. In light of the foregoing law, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness.

Weaver is directed to a metal matrix composite material comprising silicon boride particles. Eiko et al. merely teaches a light weight metal alloy body for a horseshoe, and in no way suggests a metal matrix composite material. Weaver provides no suggestion or motivation to modify or to combine the composition material with the alloy body of Eiko et al. with any reasonable expectation of arriving at a horseshoe. Indeed, the only basis Examiner provides for such a combination is that Weaver makes mention that light weight metals are used in a variety of industries. Notably, Weaver provides no direction to enable the skilled artisan to arrive at the horseshoe industry. To be sure, Weaver does not cite any specific industry. Such passing reference to "a variety of industries" does not provide the skilled artisan at the time the invention was made with any reasonable expectation of success using Weaver's composite material in the horseshoe industry. The mere mention that light weight metal alloys are used in a variety of industries is far too vague to motivate the skilled artisan to arrive at the alleged combination.

metal is not one for only horse industry or other industry

The Examiner states that she is "presenting an example of an industry where a metal matrix can be used because Weaver had stated that metal matrix is highly in demand in a large variety of industries which require metal to make their products". Notwithstanding the inadequacy of this vague mention of a "variety of industries" as argued above, well established law does not permit this combination. To elaborate, courts have long held that the mere fact that references can be combined or modified does not render the resultant combination obvious, unless the prior art also suggests the desirability of such combination. In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000); In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. In view of this well established principle, the combination suggested by the Examiner does not render the claimed invention obvious. In

concluding that the combination is obvious, the Examiner is employing an "obvious to try" rationale: a standard long held as inadequate to support a *prima facie* case of obviousness. In re Clinton, 527 F.2d 1226, 1228, 188 USPQ 365, 367 (CCPA 1976).

For the foregoing reasons alone, Applicant respectfully submits that the rejection under 35 U.S.C. 103(a) is overcome, and withdrawal thereof is respectfully requested. In addition to the foregoing, however, Applicant submits that indicia of nonobviousness exist that serve to buttress Applicant's request for withdrawal of the rejection. First, as stated in the specification, lines 16-23, the invention displays "unexpected wear behavior". Samples made from 10 weight percent silicon hexaboride particles in an aluminum matrix had 7 times better wear than 17.5 weight percent silicon carbide in an aluminum matrix and 30 times better wear than straight aluminum. These remarkable and unexpected results are further indicia of the nonobviousness of the present invention, especially since such results are not taught, contemplated, nor remotely suggested by Eiko et al.. Second, the samples exhibited unexpectedly good vibration damping qualities, which reduces shock to the horses' legs. Such good vibration damping quality is not suggested in the cited references.

Accordingly, the rejection of Claim 1 under 35 U.S.C. 103(a) is overcome and withdrawal thereof is respectfully requested.

The remaining rejections of Claims 2 – 16 under 35 U.S.C. 103(a) are dependent upon the propriety of the combination of cited references. Since it has been shown that the

combination does not support an obviousness rejection, the rejections are overcome and withdrawal thereof is respectfully requested.

With respect to the rejection based upon the judicially created doctrine of obviousness type double patenting, the Examiner alleges that Claims 1-16 are unpatentable over Claims 1-20 of Weaver in view of Eiko et al.. The Examiner cites the same rationale for the combination as was purported for the foregoing rejection under 35 U.S.C. 103(a). Applicant respectfully submits that combination of the cited references is improper in view of the current law as set forth above. Therefore the rejection based upon obviousness type double patenting is overcome, and withdrawal thereof is respectfully requested.

Applicant respectfully submits that the foregoing remarks place the above-identified Application in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

DYSON

By:

John A. Monocello III

Christine L. Wettach
U.S. PTO Reg. No. 41,373
John A. Monocello III
U.S. PTO Reg. No. 51,022
Cohen & Grigsby, P.C.
11 Stanwix Street, 15th Floor
Pittsburgh, PA 15222
(412) 297-4900
Attorney for Applicant